DOCUMENT RESUME

ED 251 282 RC 015 084

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TITLE IAI Information and Priority District Programs: A Case Study Involving the Instructional Accomplishments of Hispanic Students in Racially Isolated Schools. Technical Report 76.
INSTITUTION Southwest Regional Resource Center, Salt Lake City, Utah.
SPONS AGENCY National Inst. of Education (ED), Washington, DC.
PUB DATE 25 Mar 82
CONTRACT NEC-00-3-0064
NOTE 25p.
PUB TYPE Reports - Research/Technical (143)

EDRS PRICE MF01/PC01 Plus Postage.
DESCRIPTORS *Academic Achievement; Achievement Gains; Educational Planning; Elementary Education; *Hispanic Americans; Instruction; *Instructional Systems; *Racial Segregation; School Districts; *School Effectiveness
IDENTIFIERS *Instructional Accomplishment Information; Los Angeles Unified School District CA; *Racially Isolated Minority Schools

ABSTRACT

Instructional Accomplishment Information (IAI) systems provide schools and school districts with information for reviewing and planning their instructional programs at the class, school, and district levels. This study demonstrated the use of IAI information to illuminate further the instructional accomplishments of schools priority program to which a district is committed. One of the procedural principles suggested by Milazzo, Buchanan, and Schutz (1981) for analyzing IAI district level databases in Racially Isolated Minority (RIM) school or other special priority program context was to identify those students who register instructional accomplishments at or above the average for non-RIM (or non-program) students. The procedure was applied to 89 Hispanic RIM schools in the Los Angles Unified School District relative to the accomplishment information yielded by the District's 1980 Survey of Essential Skills. Demonstrating that the procedure was practical, the findings showed that: a 5% random sample of student records was adequate to preliminarily identify such schools; the procedure revealed substantial positive accomplishments in Hispanic RIM schools; the accomplishments did cluster in some RIM schools more than others; and schools and schooling practices did make a difference in attaining instructional accomplishments. (NQA)

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IAI Information and Priority District Programs: A Case Study Involving the Instructional Accomplishments of Hispanic Students in Racially Isolated Schools

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TECHNICAL REPORT 76

March 25, 1982

IAI Information and Priority District Programs: A Case Study Involving the Instructional Accomplishments of Hispanic Students in Racially Isolated Schools

Barry Bachelor

ABSTRACT

Instructional Accomplishment Information (IAI) systems are designed to provide school districts with information for reviewing and planning their instructional programs. This study outlines and demonstrates a methodology for using IAI information to illuminate further the instructional accomplishments of schools priority program to which a district is committed. This methodology is one aspect of that described by Milazzo, Buchanan and Schutz (1981) for analysis of district level data bases. The particular context for demonstration is that of Hispanic Racially Isolated Minority Schools (RIMS). The study shows that there are substantial instructional accomplishments in Hispanic RIM schools and that the accomplishments do cluster in some schools more than others. That is, some Hispanic RIM schools are more effective than others and this study identifies the effective subset.

IAI INFORMATION AND PRIORITY DISTRICT PROGRAMS: A CASE STUDY INVOLVING THE INSTRUCTIONAL ACCOMPLISHMENTS OF HISPANIC STUDENTS IN RACIALLY ISOLATED SCHOOLS

Barry Bachelor

Instructional Accomplishment Information (IAI) systems are designed to provide schools and school districts with information for reviewing and planning their instructional programs at the class, school, and district levels. The distinctive features of IAI systems are discussed by Milazzo and Buchanan (1980). Milazzo, Buchanan, and Schutz (1981) also describe a methodology for instructional interpretation and planning at the district level while Behr and Yee (1982) describe a complementary methodology at the class and school level.

The purpose of the present study is to demonstrate one of the interpretation and planning uses at the district level: Using IAI information to illuminate further the instructional accomplishments of schools priority program to which a district is committed. The particular context chosen for demonstration is that of Hispanic Racially Isolated Minority Schools (RIMS) in the Los Angeles Unified School District.

The methodology demonstrated is one aspect of that described by Milazzo, Buchanan, and Schutz (1981) for analysis of district level data bases. One of the key principles in the methodology is to isolate instructional accomplishments and then to track down the school and classroom practices that lead to the identified accomplishments:

> The commitment is to isolating RIMS accomplishments, and not just because it is beneficial to point to them--although that would be a refreshing change for RIMS. The intention is to isolate RIMS accomplishments so that they can be traced back to practices that

schools have some control over . . .. The research is for what works in RIMS, to find it and hang onto it, and to generalize it to other RIMS P. 7-8 .

One suggested procedural step for isolating the accomplishments is to "identify those RIMS students who have accomplishment scores that are at or above the district average; or, even better, at or above the average for non-RIMS students" (p. 7). The present report describes the results of applying the suggested procedural step in identifying "RIMS" accomplishments of Hispanic students based upon accomplishment information generated and accumulated in the Los Angeles Unified School District during the 1979-80 school year.

Background: 1980 Survey of Essential Skills

Beginning in 1979, the Los Angeles Unified School District in collaboration with SWRL has developed, installed, and operated an IAI system. The system has several components:

- Survey of Essential Skills (SES)

  The SES are instruments for obtaining instructional accomplishment information in Reading, Mathematics, and Composition for grades 1, 2, 3, 4, 5, and 6. They are administered to all elementary school students each May. They register student accomplishments on the skills deemed essential for grade-by grade progress in each subject area. The student materials are supported by teacher materials, inservice materials, etc.

- SES Reporting System

  The completed SES instruments are machine scannable so that results can be quickly processed and reports prepared for each individual student, for each school aggregrated by grade level within school, for each administrative area, and for the district as a whole. The computer software for scanning and processing the results is installed on the District's computer and is operated by District personnel. The reporting system is supported by appropriate print and inservice materials.

- SES 5% Sample

  As part of the computer processing, approximately 5% of the individual student records are randomly selected and stored in a separate archival file for research purposes. Each student record contains demographic and accomplishment information as follows:

Demographic	Accomplishments
1. Attendance Information	For each subject area--Reading, Mathematics, Composition:
2. Home School Code	
3. Ethnicity	1. Item responses
4. Sex	2. Skill area performance including writing sample performance at grades 3 and 6
5. Language Fluency (as applicable for bilingual program considerations)	3. Total performance

  This 5% sample is used as the data base for the analyses performed in this report.

Classifying Schools by Student Language Classification Categories

For the present analysis, only those schools that had a two-thirds majority Hispanic enrollment and were designated as RIM schools were considered. There were 89 such schools in the data base. These 89 schools were then further subdivided into two types according to the proportions of FES (Functional English Speaking) and NES/LES (Non-English Speaking/Limited English Speaking) students in the school. This information is summarized in Table 1.

Table 1

School Characteristics

Main Characteristics of 89 Schoo's

Designated "RIM" (Racially Isolated Minority) by the court
Two-thirds or more Hispanic enrollment

Type 1 Schools (63 schools)

- two-thirds or more of Hispanic students in school classified as FES (Functional English Speaking)
- Average over 63 Schools: 82% Hispanic
  79% FES

Type 2 Schools (26 schools)

- one-third or more of Hispanic students in school classified as NES/LES
- Average over 26 schools: 82% Hispanic
  51% NES/LES

The remainder of the analysis in this report is confined to Type 1 schools (FES Hispanic RIM) because of the school district's testing policy. The policy requires every FES student to be assessed at every grade level. Students classified as NES/LES are not to be tested except at Grade 6. Consequently, there are "full" data sets only for Type 1 schools, and it is these data sets upon which the analysis focuses.

Identifying Patterns of School Performance

Once the set of 63 FES Hispanic RIM schools had been identified, the next step was to identify their overall performance relative to non-

RIM schools. For simplicity, performance of the District's white students was used as the proxy for the "performance of non-RIM schools."

When RIM schools are compared with "white" schools, scores for the overall group of white students is predictably higher than for the overall group of RIM schools (Milazzo, Buchanan, & Schutz, 1981). However, many Hispanic RIM students are performing above the white student average. The approach taken in this paper is to identify those Hispanic RIM schools (Type 1) that have a relatively large proportion of students performing at or above the average level for white pupils. An example illustrates the procedure.

In fourth grade mathematics the average district-wide percentage for white pupils is 80%. The average district-wide for Hispanic FES pupils is 68%. However, approximately one-third (33.5%) of the Hispanic FES pupils in the district performed above 80%. Further, "high scoring" Hispanic FES pupils attending RIM schools were enrolled in only 64% of the RIM schools. In other words, 36% of the Type 1 RIM schools had no Hispanic FES pupils performing above the white pupil average in fourth grade mathematics.

To determine whether a school had a large proportion of "high scoring" pupils, the district-wide proportion of Hispanic FES students exceeding the average "white" student score was used as the cut-off point. If a school's proportion of high scoring pupils in a particular grade and subject area exceeded the district proportion, it was simply given one point. The number of points was then summed for each school

across all subjects and grades. Because there are 6 grades and 3 subjects, each school can "score" anywhere from 0 to 18 "points."

In the previous example, district-wide, 33.5% of the Hispanic FES pupils exceeded the white mean of 80% correct in fourth grade mathematics. Each school in the sample was examined to see if its proportion of high scoring pupils was at or above the district-wide proportion of 33.5%. If it was, the school was assigned one point. This process was carried out over the 18 comparison points (6 grades x 3 subject areas) and the results were summed.

Another way to think of this is to ask of each school, "Is this school doing more than its share in contributing to the number of high scoring pupils in, say, fourth grade mathematics?" If the answer is yes, then give the school one point. This process was repeated for each subject area in each grade and the number of the points was summed. The results of this scoring process are shown in Table 2.

The distribution of points in Table 2 shows that there is considerable variability in the number of times schools exceed the district-wide proportions at the 18 comparison points. Forty-four percent of the schools meet the criteria more than half of the time. Approximately one-third of the schools meet the criteria five to nine times, while nearly 20% of the schools scored four or less. Overall, Table 2 shows that some schools are more effective than others, and that these schools can be identified.

Table 2

Distribution of FES Hispanic RiM Schools Across the Point Scale

Total Points*	Number of Schools	Percent of Schools	Cumulative Percent
15	1	1.6	1.6
14	1	1.6	3.2
13	4	6.3	9.5
12	4	6.3	15.9
11	4	6.3	22.2
10	14	22.2	44.4
9	4	6.3	50.8
8	5	7.9	58.7
7	2	3.2	61.9
6	7	11.1	73.0
5	5	7.9	81.0
4	7	11.1	92.1
3	2	3.2	95.2
2	1	1.6	96.8
1	1	1.5	98.4
0	1	1.6	100.0

*For schools that did not contain data on all six grade levels the percentage of actual points earned to total possible points was calculated and then extrapolated to the full point scale.

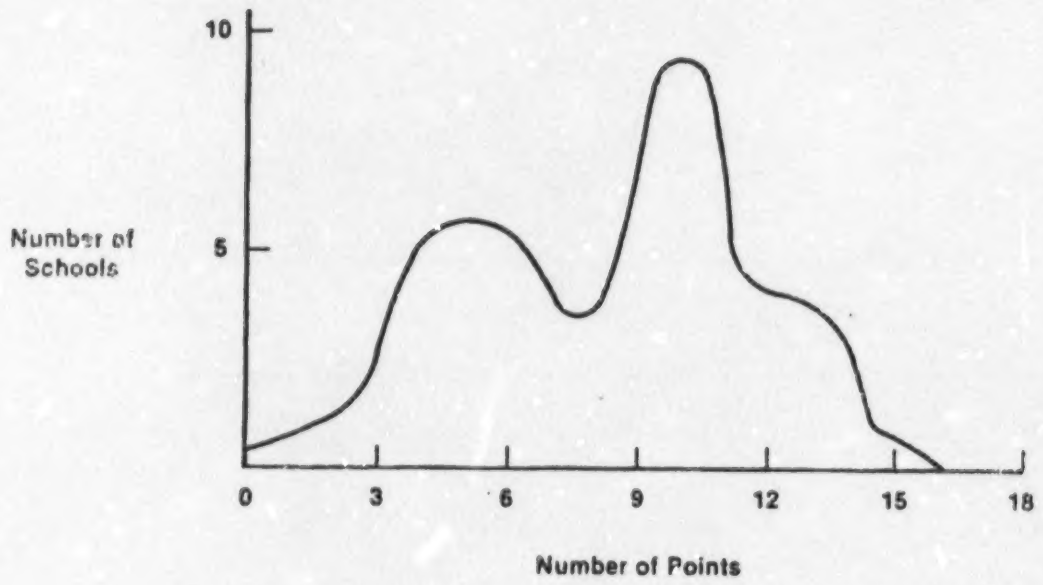

Figure 1. Distribution of Hispanic RIM Schools Across the Point Scale

The information in Table 2 is graphically displayed in Figure 1 which highlights the fact that accomplishments are not uniformly spread across schools. The smoothed curve in Figure 1 clearly shows that the schools separate themselves into two fairly distinct groups.

The total number of points is obviously the sum of the number of points accumulated in Reading, Mathematics and Composition across the six grade levels. Since the purpose of this paper is to identify instructional accomplishments in RIM schools, those schools that show accomplishments in a particular subject area are also of interest. Such accomplishments could be masked if only the total score is used to identify an effective school. For example, if a school obtains a point in all six grades of mathematics but does not receive any points in Reading or Composition, it would have a total score of six. Such a school would fall in the bottom fourth of the distribution and

would thus not be identified as as an "effective" school. But obviously this school is doing an outstanding job in Mathematics and should therefore be so acknowledged. Also, one may be interested in taking a closer look at schools that do display uneven patterns. These schools may be found to be over-emphasizing one subject at a real cost to others. Or, one might look to see if subject areas may be used to complement each other. The subject area score patterns are displayed in Table 3.

The subject area patterns in Table 3 allow one to identify schools that are demonstrating instructional accomplishments in certain subject areas but not others. For example, the school with a 1 1 4 pattern appears to be doing quite well in composition but exceeded the criterion only once in reading and mathematics. This school could be selected as an exemplar of composition instruction. Or, it may be beneficial to investigate how this school might complement its reading program with its composition program since the potential for positive generalization is highly practicable. The few obvious inconsistencies, displayed in Table 4, mostly involve one subject area dominating the other two subject areas. I.e., one subject area appears strong while the other two appear relatively weak.

Table 3

Subject Area Patterns

Total Points	Subject Area Points			Number of Patterns
	Reading	Mathematics	Composition	
15	5	5	5	1
14	5	4	5	1
13	3	5	5	1
	5	4	4	1
	3	6	4	1
12	5	3	4	2
	5	4	3	1
	3	5	4	1
11	4	4	3	2
	5	3	3	1
	4	3	4	1*
	3	4	4	1
10	4	4	2	1
	2	5	3	1
	3	4	3	5
	5	2	3	1
	3	5	2	1
	4	3	3	2
9	3	3	3	2
	3	4	2	1
	4	4	1	1
8	2	3	3	3*
	1	3	4	1*
	2	2	4	1*
	3	3	2	1
7	2	2	3	1
	3	2	2	1*
6	1	4	1	1*
	3	2	1	1
	1	1	4	1
	2	3	1	1
	2	2	2	1
	2	1	3	2
5	1	1	3	1
	0	2	3	1
4	1	2	1	5*
	2	1	1	1
	0	1	3	1
3	1	2	0	1*
	0	2	1	1
2	0	2	0	1
1	0	0	1	1*

*Includes 1 pattern based on 5 grade levels rather than 6 grade levels. I.e., the school only has test data for five of the six grades. Straight proportional interpolation was applied to the 5-grade pattern to estimate the 6-grade pattern. (Schools with less than 5 grade levels of test data are excluded from this score pattern table. There are five such schools.)

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Table 4

Unusual Patterns

	Subject Area Points		
Points	Reading	Mathematics	Composition
13	3	6	4
11	5	3	3
10	2	5	3
	5	2	3
	3	5	2
9	4	4	1
8	2	2	4
6	1	4	1
	1	1	4

How well does the point scale distinguish among various levels of instructional accomplishments? Figures 2, 3, and 4 display the average percentage of Hispanic FES pupils school-wide that exceed the white pupil mean at each point on the scale for each subject area. Looking at Figure 2 we can see that all the schools that scored two points in reading have an average of 27% of their pupils scoring above the white pupils' mean. Similarly, for schools with three points, there was an average of 31% of their pupils scoring above the white mean. The boxes drawn about the mean represent one standard error and the lines extended

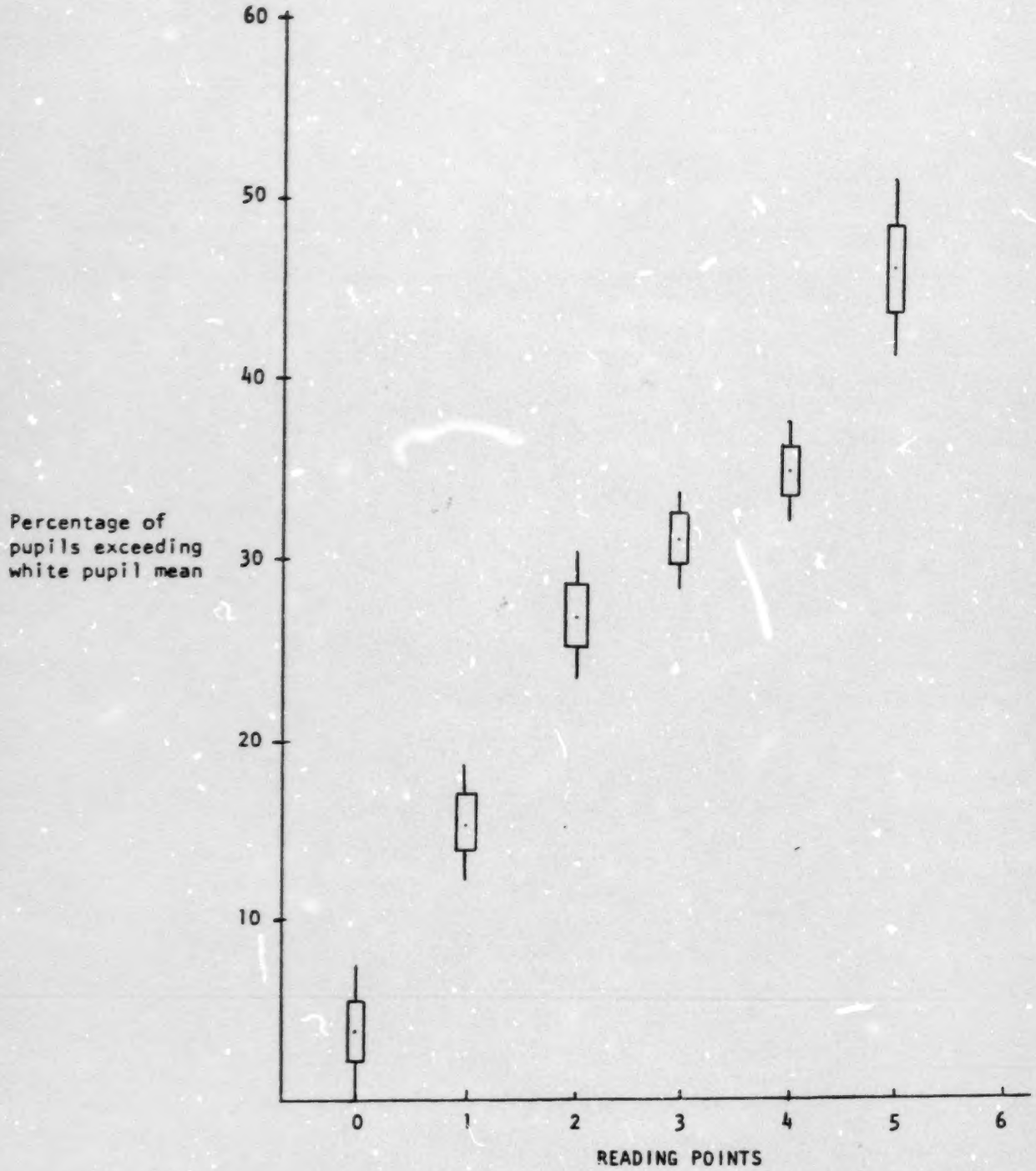

Figure 2. Average school-wide percentage of pupils exceeding white pupil mean in reading by the point scale with 95% confidence bands.

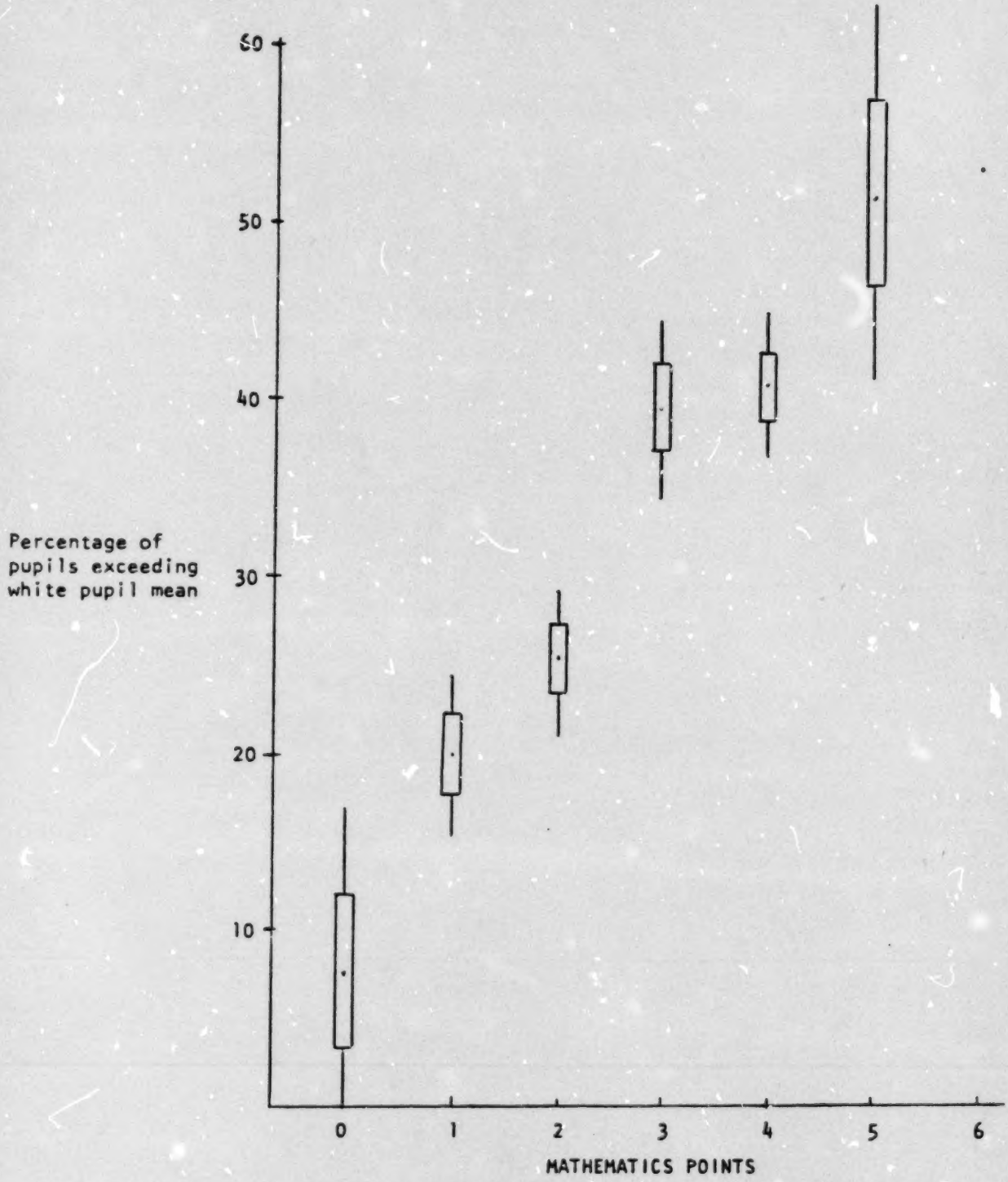

Figure 3. Average school-wide percentage of pupils exceeding white pupil mean in mathematics by the point scale with 95% confidence bands.

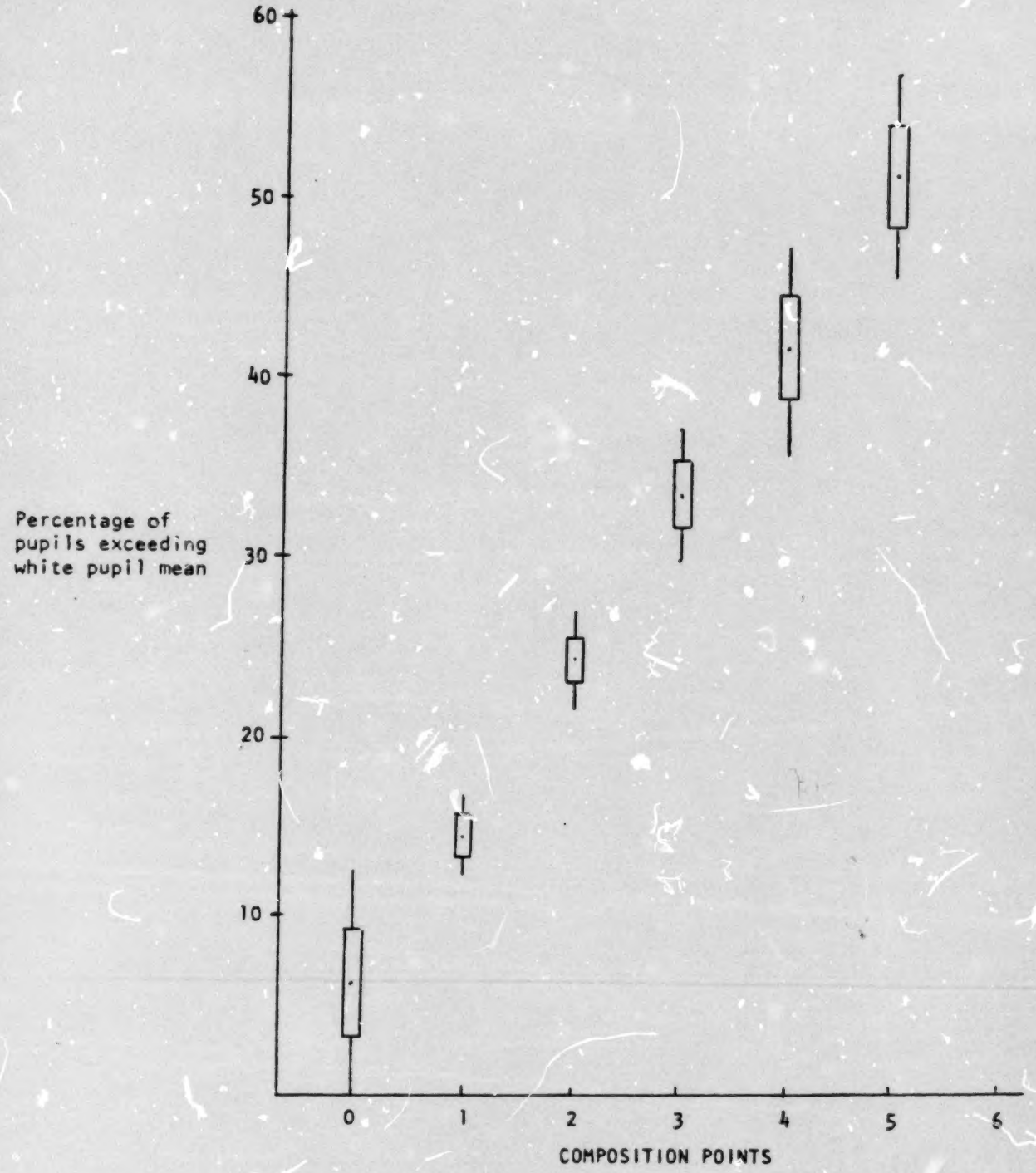

Figure 4. Average school-wide percentage of pupils exceeding white pupil mean in composition by the point scale with 95% confidence bands.

from the boxes are two standard errors giving an approximate 95% confidence interval.

In some cases, there is no reliable difference between groups of schools that differ by a single point. However, one can be reasonably confident that there is a reliable difference between groups of schools that differ by more than one point.

Correlations among the subject areas given in Table 5 confirm what is evident by visual inspection of the patterns. Correlations between subject areas are moderately high the correlations between subject areas and the total aggregate are very high. These correlations indicate that selecting schools on the basis of the total aggregate would also select most of those schools that had high subject area scores. However, it would also miss the distinctive pattern features that are evident within and between subject areas.

Table 5

Correlations Between Subject Areas and Total Aggregate

	Reading	Mathematics	Composition	Total
Reading	--			
Mathematics	.61	--		
Composition	.56	.51	--	
Total*	.86	.82	.81	

*The adjusted total was used for cases with missing grade-level information.

Identifying Effective Schools

The final step in the process is to set some point or pattern criterion and identify by name those schools that meet or exceed. For example, one criterion could be:

a. either a total school score of 9 or more,

b. or, a score of 4 or more in a subject area

Setting a cut-off score always involves some degree of arbitrariness. Nine and four are cut-off points that do identify schools where the majority of the grade-by-subject-area instructional programs appear to be relatively effective on a comparison basis. Schools meeting the criterion appear to have more consistent accomplishments across grade levels and/or subject areas than those schools below the cut-off points. When the above criteria are applied to the 63 FES Hispanic RIM schools in Los Angeles, 34 schools (54%) meet these particular criteria.

Figure 5 displays the same type of information that was given in Figures 2, 3, and 4. Here the percentage of pupils exceeding the white pupil mean is plotted against the total score broken out by approximate quartiles. The information displayed here and in Figure 1 suggests that a score of 9 is a very reasonable cut-off point for selecting schools. Further, one can be reasonably confident that those schools below the cut-off are different than those above the cut-off. Using a total score of 9 as a cut-off will select those schools that are meeting the criteria a majority of the time. It is also the point where the top 50% of the schools would be selected. To also include those schools that

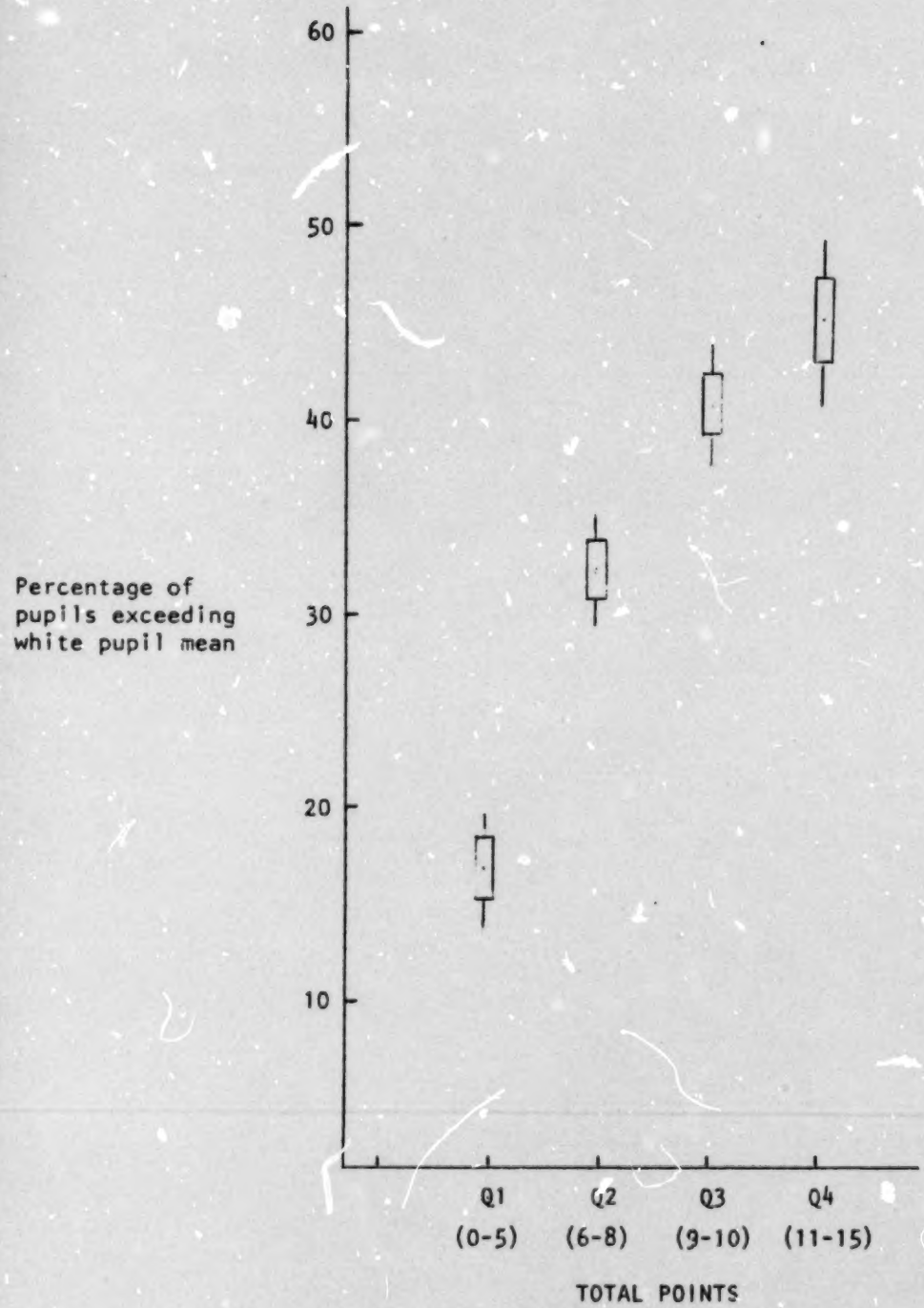

Figure 5. Average school-wide percentage of pupils exceeding white pupil mean by total number of points in quartiles with 95% confidence bands.

have a score of 4 or more in a subject area would add two additional schools.

"Selected/non selected" should not be equated with "accomplishments no accomplishments." There are certainty accomplishments in the non-selected schools. The procedure simply ranks the schools on specified criteria and selects from the top of the list. Further study can then identify RIMS schooling practices that create the student and school performance patterns. Milazzo, Buchanan, and Schutz (1981) have provided a fairly comprehensive list of factors that are likely to account for these differences in performance. Factors such as:

- textbook series used and period of use
- average length of classroom lesson
- percentage of textbook lessons completed
- percentage of substitute teacher days
- percentage of classroom time controlled by specialist
- percentage of school day spent disciplining students
- percentage of school day spent directing aide

are a few that are mentioned by Milazzo et al., that need to be investigated to determine their effect on student performance.

Subsequent study of the schools should of course be observant of demographic and non-school factors as well. It is unlikely, however, that demographic or non-schooling characteristics account for most of the variability. The schools are all Hispanic RIM schools with roughly equal levels of English-language fluency. Though there are demographic variations between these schools, it is unlikely that they account for

the instructional accomplishment differences. Table 6 shows the breakdown of selected and not- selected schools by administrative area and indicates that the selection of schools does not appear to be related to administrative areas.

Table 6

Number of Selected vs. Not-Selected Schools by Administrative Area

Area	Number of Schools		
	Selected	Not Selected	Totals
1	2	1	3
2	7	10	17
4	0	1	1
6	18	13	31
7	7	4	11
Totals	34	29	63

χ^2 (4) = 3.35; n.s.

Summary

One of the procedural principles suggested by Milazzo et al. for analyzing IAI district level data bases in a RIMS or other special priority program context is to identify those students who register instructional accomplishments at or above the average for non-RIM (or non-program) students. This study applies the procedure to Hispanic RIM schools in the Los Angeles Unified School District relative to the accomplishment information yielded by the District's 1980 Survey of

Essential Skills. The findings demonstrate that the procedure is practical, showing in particular that:

1. a 5% random sample of student records is adequate to preliminarily identify such schools

2. the procedure reveals the many positive accomplishments of the special priority program--RIM schools

3. the accomplishments do cluster in some RIM schools more than others (i.e., the accomplishments are not uniformly spread across all RIM schools); the procedure identifies 34 Hispanic RIM schools

4. the preceding findings provide sound evidence that schools and schooling practices do make a difference in attaining instructional accomplishments

5. the next logical step is to track down the schooling practices in the identified schools that contribute to the observed pattern of accomplishments

6. the distribution of schools involved provides a very manageable basis for follow-up efforts

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